

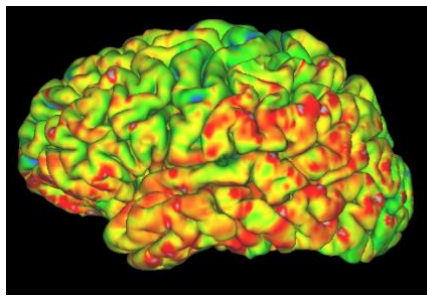
Master or Semester project

Location: CHUV, Lausanne
Dates: Autumn semester 2024

Cortical Microstructure changes in Schizophrenia

Schizophrenia is a psychiatric disease associated with subtle but widespread brain changes. Diffusion MRI is a powerful tool to quantify biological tissue microstructure in vivo and non-invasively. This master project offers a unique opportunity to contribute to translational research in psychiatry and neuroscience. We propose to (A) characterise brain cortical microstructure changes in patients with schizophrenia measured via novel Diffusion MRI markers and (B) relate them to metabolic changes measured using MR Spectroscopy.

In this project, you will learn: to process neuroimaging data, to operate a high-performance computing (HPC) cluster, refine your machine-learning/statistics skills and make a first step into the field of computational psychiatry.



Skills:

Your qualifications, previous experience and background:

- Electrical, Micro- and Life Science Engineering or Physics.
- Programming skills in Python and/or bash are required. Good knowledge of statistics is a plus.

Supervisors:

- Asst.Prof. [Ileana Jelescu](#), Microstructure Mapping Lab, Radiology, CHUV
- Asst.Prof. [Lijing Xin](#), CIBM MRI EPFL-AIT
- [Tommaso Pavan](#), Microstructure Mapping Lab, Radiology, CHUV

How to apply:

if you are interested to learn more about the project, please contact: ileana.jelescu@chuv.ch or tommaso.pavan@chuv.ch.



About CIBM

The CIBM Center for Biomedical Imaging was founded in 2004 and is the result of a major research and teaching initiative of the partners in the Science-Vie-Société (SVS) project between the Ecole Polytechnique Fédérale de Lausanne (EPFL), the Université de Lausanne (UNIL), Université de Genève (UNIGE), the Hôpitaux Universitaires de Genève (HUG) and the Centre Hospitalier Universitaire Vaudois (CHUV), with the generous support from the Fondation Leenaards and Fondation Louis-Jeantet.

CIBM brings together highly qualified, diverse, complementary and multidisciplinary groups of people with common interest in biomedical imaging.

We welcome you in joining the CIBM Community.

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